

In the claims:

Please amend the claims as follows:

1. (Currently amended): A light-radiating semiconductor component, comprising:
- a semiconductor body emitting electromagnetic radiation during an operation of the semiconductor component, said semiconductor body having a semiconductor layer sequence suitable for emitting electromagnetic radiation of a first wavelength range selected from a spectral region consisting of ultraviolet, blue, and green;
  - a first electrical terminal and a second electrical terminal each electrically conductively connected to said semiconductor body;
  - a luminescence conversion element with at least one luminescent material, said luminescence conversion element converting a radiation originating in the first wavelength range into radiation of a second wavelength range different from the first wavelength range, such that the semiconductor component emits polychromatic radiation comprising radiation of the first wavelength range and radiation of the second wavelength range;
- said luminescence conversion element comprising a luminescence conversion layer produced from a silicone and containing inorganic luminescence material selected from the group consisting of garnets doped with rare earths, alkaline earth metal sulfides doped with rare earths, thiogallates doped with rare earths, aluminates doped with rare earths, and orthosilicates doped with rare earths.

7. (Currently amended): The semiconductor component according to claim 1, <sup>2 3 4 5</sup>~~13, 25, 26, 82~~ or <sup>6</sup>~~53~~ wherein said luminescence conversion ~~element~~ layer converts radiation of the first wavelength range into radiation of a plurality of second wavelength ranges from mutually different spectral subregions, such that the semiconductor component emits polychromatic radiation comprising radiation of the first wavelength range and radiation of the plurality of second wavelength ranges.

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(Currently amended): The semiconductor component according to claim 1, <sup>2 3 4 5</sup>~~13, 25, 26, 32~~ or ~~53~~, wherein the semiconductor component has a defined main radiating direction, and said luminescence conversion ~~element~~ layer is disposed substantially downstream of said semiconductor body in the main radiating direction of the semiconductor component.

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(Currently amended): The semiconductor component according to claim 1, <sup>2</sup>~~13~~, wherein said luminescence conversion element is at least one luminescence conversion layer disposed in a vicinity of said semiconductor body.

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(Currently amended): The semiconductor component according to claim 1, <sup>2</sup>~~13~~, wherein said luminescence conversion element is a luminescence conversion encapsulation enclosing at least a part of said semiconductor body and partial regions of said first and second electrical terminals.

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(Currently amended): The semiconductor component according to claim 1, <sup>3 4</sup>~~25 or 26~~, wherein said second wavelength range includes wavelengths at least some of which are longer than wavelengths of the first wavelength range.

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(Currently amended): The semiconductor component according to claim 1, <sup>3 4</sup>~~25 or 26~~, wherein said semiconductor body is adapted to emit ultraviolet radiation during operation of the semiconductor component, and said luminescence conversion element converts at least a portion of the ultraviolet radiation into visible light.

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(Currently amended): The semiconductor component according to claim 1, <sup>3 4</sup>~~25 or 26~~, wherein the first wavelength range and the second wavelength range of the polychromatic radiation lie at least partially in mutually complementary-color spectral regions, and a combination of radiation from the first and second wavelength range results in white light.

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9. <sup>14</sup> (Currently amended): The semiconductor component according to claim 2 <sup>3 4</sup> ~~25~~ or ~~26~~,  
wherein said luminescence conversion element converts radiation of the first wavelength  
range into radiation of a plurality of second wavelength ranges from mutually different  
spectral subregions, such that the semiconductor component emits polychromatic  
radiation comprising radiation of the first wavelength range and radiation of the plurality  
of second wavelength ranges, wherein the first wavelength range emitted by said  
semiconductor body and two second wavelength ranges produce an additive color triad,  
such that white light is radiated by the semiconductor component during operation  
thereof.

C 10. <sup>19</sup> (Currently amended): The semiconductor component according to claim 1 <sup>3 4</sup> ~~25~~ or ~~26~~,  
wherein the radiation emitted by said semiconductor body has a luminescence intensity  
maximum in a blue spectral region at a wavelength ~~selected from the group consisting of~~  
λ=430 nm and λ=450 nm between 420 nm and 460 nm.

16 11. <sup>16</sup> (Currently amended): The semiconductor component according to claim 1 <sup>3 4</sup> ~~25~~ or ~~26~~,  
which further comprises an opaque base housing formed with a recess, and wherein said  
semiconductor body is disposed in said recess of said base housing, and including a  
covering layer having a luminescence conversion layer on said recess.

17 12. <sup>17</sup> (Currently amended): The semiconductor component according to claim 1 <sup>3 4</sup> ~~25~~ or ~~26~~,  
which further comprises an opaque base housing formed with a recess, and wherein said  
semiconductor body is disposed in said recess of said base housing, and wherein said  
recess is at least partially filled with said luminescence conversion element.

2 13. <sup>2</sup> (Currently amended): A light-radiating semiconductor component, comprising:  
a semiconductor body emitting electromagnetic radiation during an operation of the  
semiconductor component, said semiconductor body having a semiconductor layer  
sequence suitable for emitting electromagnetic radiation of a first wavelength range  
selected from a spectral region consisting of ultraviolet, blue, and green;

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a first electrical terminal and a second electrical terminal each electrically  
conductively connected to said semiconductor body;

a luminescence conversion element with at least one luminescent material, said  
luminescence conversion element converting a radiation originating in the first  
wavelength range into radiation of a second wavelength range different from the first  
wavelength range, such that the semiconductor component emits polychromatic radiation  
comprising radiation of the first wavelength range and radiation of the second wavelength  
range. The semiconductor component according to claim 1, wherein said second  
wavelength range includes wavelengths at least some of which are longer than  
wavelengths of said first wavelength range, and said luminescence conversion element  
comprises a plurality of layers with mutually different wavelength conversion properties.

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14. (Currently amended): The semiconductor component according to claim 1, ~~13, 25 or 26~~,<sup>2 3 4</sup>  
wherein said luminescence conversion element includes organic dye molecules in a  
plastic matrix.

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15. (Currently amended): The semiconductor component according to claim 1, ~~13, 25 or 26~~,<sup>2 3 4</sup>  
wherein said luminescence conversion element includes organic dye molecules in a  
plastic matrix, and wherein said plastic matrix is formed from a plastic material selected  
from the group consisting of silicone, thermoplastic material, and thermosetting plastic  
material.

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16. (Currently amended): The semiconductor component according to claim 1, ~~13, 25 or 26~~,<sup>2 3 4</sup>  
wherein said luminescence conversion element includes organic dye molecules in a  
plastic matrix, and wherein said luminescence conversion element has organic dye  
molecules in a matrix selected from the group consisting of an epoxy resin matrix and a  
polymethyl methacrylate matrix.

21  
17. (Currently amended): The semiconductor component according to claim + ~~13, 25 or 26~~,  
wherein said luminescence conversion element has at least one inorganic luminescence  
material selected from the phosphor group.

22  
18. (Currently amended): The semiconductor component according to claim 17 ~~13, 25 or 26~~,  
wherein the inorganic luminescent material is selected from the group of Ce-doped  
garnets.

23  
19. (Currently amended): The semiconductor component according to claim 18 ~~13, 25 or 26~~,  
wherein the inorganic luminescent material is YAG:Ce.

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20. (Currently amended): The semiconductor component according to claim 17 ~~13, 25 or 26~~,  
wherein said luminescence conversion element has at least one inorganic luminescence  
material selected from the phosphor group, and wherein the inorganic luminescent  
material is embedded in an epoxy resin matrix.

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21. (Currently amended): The semiconductor component according to claim 17 ~~13, 25 or 26~~,  
wherein said luminescence conversion element has at least one inorganic luminescence  
material selected from the phosphor group, and wherein the inorganic luminescent  
material is embedded in a matrix formed of inorganic glass with a relatively low melting  
point.

26  
22. (Currently amended): The semiconductor component according to claim 22 ~~13, 25 or 26~~,  
wherein said luminescence conversion element has at least one inorganic luminescence  
material selected from the phosphor group, and wherein the inorganic luminescent  
material is embedded in an epoxy resin matrix, and wherein the inorganic luminescent  
material has a mean particle size of approximately 10  $\mu\text{m}$ .

27  
23. (Currently amended): The semiconductor component according to claim + ~~13, 25 or 26~~,  
wherein said luminescence conversion element is provided with a plurality of mutually

different materials selected from the group consisting of organic and inorganic luminescent materials.

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24.

(Currently amended): The semiconductor component according to claim + <sup>23 4</sup>~~13, 25~~ or ~~26~~, wherein said luminescence conversion element includes dye molecules selected from the group consisting of organic and inorganic dye molecules partly with and partly without a wavelength conversion effect.

C1  
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25.

(Currently amended): A light-radiating semiconductor component, comprising:  
a semiconductor body emitting electromagnetic radiation during an operation of the  
semiconductor component, said semiconductor body having a semiconductor layer  
sequence suitable for emitting electromagnetic radiation of a first wavelength range  
selected from a spectral region consisting of ultraviolet, blue, and green;

a first electrical terminal and a second electrical terminal each electrically  
conductively connected to said semiconductor body;

a luminescence conversion element with at least one luminescent material, said  
luminescence conversion element converting a radiation originating in the first  
wavelength range into radiation of a second wavelength range different from the first  
wavelength range, such that the semiconductor component emits polychromatic radiation  
comprising radiation of the first wavelength range and radiation of the second wavelength  
range. The semiconductor component according to claim 1, wherein said luminescence  
conversion element is selected from the group consisting of at least one luminescence  
conversion layer disposed in a vicinity of said semiconductor body and a luminescent  
conversion encapsulation enclosing at least a part of said semiconductor body and partial  
regions of said first and second electrical terminals, and wherein said luminescence  
conversion element includes light-diffusing particles.

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26.

(Currently amended): A light-radiating semiconductor component, comprising:  
a semiconductor body emitting electromagnetic radiation during an operation of the  
semiconductor component, said semiconductor body having a semiconductor layer

sequence suitable for emitting electromagnetic radiation of a first wavelength range selected from a spectral region consisting of ultraviolet, blue, and green;

a first electrical terminal and a second electrical terminal each electrically conductively connected to said semiconductor body;

a luminescence conversion element with at least one luminescent material, said luminescence conversion element converting a radiation originating in the first wavelength range into radiation of a second wavelength range different from the first wavelength range, such that the semiconductor component emits polychromatic radiation comprising radiation of the first wavelength range and radiation of the second wavelength range. The semiconductor component according to claim 1, wherein said luminescence conversion element is selected from the group consisting of at least one luminescence conversion layer disposed in a vicinity of said semiconductor body and a luminescence conversion encapsulation enclosing at least a part of said semiconductor body and partial regions of said first and second electrical terminals, which comprises a wherein a transparent encapsulation with includes light-diffusing particles.

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27.

(Currently amended): The semiconductor component according to claim 1, ~~13, 25 or 26,~~ <sup>23 4</sup> wherein said luminescence conversion element comprises at least one luminescent 4f-organometallic compound.

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28.

(Currently amended): The semiconductor component according to claim 1, ~~13, 25 or 26,~~ <sup>23 4</sup> wherein said luminescence conversion element includes a luminescent material that is luminescent in a blue region.

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29.

(Currently amended): The semiconductor component according to claim 1, ~~13~~ <sup>2</sup> which comprises a transparent encapsulation with a luminescent material that is luminescent in a blue region.

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(Currently amended): A full-color LED display device, comprising a plurality of the light-radiating semiconductor components of claim + ~~13, 25 or 26~~<sup>2, 3, 4</sup> arranged in a full-color LED display.

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(Currently amended): In an interior lighting of an aircraft cabin, a plurality of the light-radiating semiconductor components according to claim + ~~13, 25 or 26~~<sup>2, 3, 4</sup>.

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(Currently amended): The combination with a display device, a plurality of the semiconductor components according to claim + ~~13, 25 or 26~~<sup>2, 3, 4</sup> disposed to illuminate a display of the display device.

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(Currently amended): The combination with a display device, a plurality of the semiconductor components according to claim ~~13, 25 or 26~~<sup>2, 3, 4</sup> disposed to illuminate a display of the display device, according to claim 32, wherein said display device includes a liquid crystal display.

[Claims 34-51 (Cancelled)]

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(New): A light-radiating semiconductor component, comprising:

a semiconductor body emitting electromagnetic radiation during an operation of the semiconductor component, said semiconductor body having a semiconductor layer sequence suitable for emitting electromagnetic radiation of a first wavelength range

selected from a spectral region consisting of ultraviolet, blue, and green;

a first electrical terminal and a second electrical terminal each electrically conductively connected to said semiconductor body;

a luminescence conversion element with at least one luminescent material, said luminescence conversion element converting a radiation originating in the first wavelength range into radiation of a second wavelength range different from the first wavelength range, such that the semiconductor component emits polychromatic radiation



comprising radiation of the first wavelength range and radiation of the second wavelength range; wherein

said luminescence conversion element comprising a luminescence conversion encapsulation produced from a silicone and containing inorganic luminescence material selected from the group consisting of garnets doped with rare earths, alkaline earth metal sulfides doped with rare earths, thiogallates doped with rare earths, aluminates doped with rare earths, and orthosilicates doped with rare earths.

C1 356  
53. (New): A light-radiating semiconductor component, comprising:

a semiconductor body emitting electromagnetic radiation during an operation of the semiconductor component, said semiconductor body having a semiconductor layer sequence suitable for emitting electromagnetic radiation of a first wavelength range selected from a spectral region consisting of ultraviolet, blue, and green;

a first electrical terminal and a second electrical terminal each electrically conductively connected to said semiconductor body;

a luminescence conversion element with at least one luminescent material, said luminescence conversion element converting a radiation originating in the first wavelength range into radiation of a second wavelength range different from the first wavelength range, such that the semiconductor component emits polychromatic radiation comprising radiation of the first wavelength range and radiation of the second wavelength range; and

said luminescence conversion element being formed such that the radiation of the first wavelength range passes through said luminescence conversion element along a plurality of paths, the plurality of paths having a substantially equal path length inside said luminescence conversion element, and said luminescence conversion element emitting a substantial portion of the radiation of the first wavelength range and the radiation of the second wavelength range,

wherein said luminescence conversion element is directly deposited on said semiconductor body; and

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wherein the radiation emitted by said semiconductor body has a luminescence intensity maximum at a wavelength of or below 520 nm.

36/54.

(New): The semiconductor component according to claim ~~25~~, ~~26~~ or ~~53~~ wherein said luminescence conversion element is at least one luminescence conversion layer disposed in a vicinity of said semiconductor body.

37/55.

(New): The semiconductor component according to claim ~~25~~, ~~26~~, ~~52~~ or ~~53~~ wherein said luminescence conversion element is a luminescence conversion encapsulation enclosing at least a part of said semiconductor body and partial regions of said first and second electrical terminals.

38/56.

(New): The semiconductor component according to claim 1, ~~52~~, or ~~53~~ wherein said second wavelength range includes wavelengths at least some of which are longer than wavelengths of the first wavelength range.

39/57.

(New): The semiconductor component according to claim 1, ~~52~~ or ~~53~~ wherein said semiconductor body is adapted to emit ultraviolet radiation during operation of the semiconductor component, and said luminescence conversion element converts at least a portion of the ultraviolet radiation into visible light.

40/58.

(New): The semiconductor component according to claim 1, ~~52~~ or ~~53~~ wherein the first wavelength range and the second wavelength range of the polychromatic radiation lie at least partially in mutually complementary-color spectral regions, and a combination of radiation from the first and second wavelength range results in white light.

41/59.

(New): The semiconductor component according to claim 1, ~~52~~ or ~~53~~, wherein said luminescence conversion element converts radiation of the first wavelength range into radiation of a plurality of second wavelength ranges from mutually different spectral subregions, such that the semiconductor component emits polychromatic radiation

comprising radiation of the first wavelength range and radiation of the plurality of second wavelength ranges, wherein the first wavelength range emitted by said semiconductor body and two second wavelength ranges produce an additive color triad, such that white light is radiated by the semiconductor component during operation thereof.

47/60. (New): The semiconductor component according to claim 1, <sup>5 6</sup>~~52~~ or ~~53~~ wherein the radiation emitted by said semiconductor body has a luminescence intensity maximum in a blue spectral region at a wavelength between 420 nm and 460 nm.

C 47/61. (New): The semiconductor component according to claim 1 which further comprises an opaque base housing formed with a recess, and wherein said semiconductor body is disposed in said recess of said base housing, and including a covering layer having a luminescence conversion layer on said recess.

44/62. (New): The semiconductor component according to claim 1, <sup>5 6</sup>~~52~~ or ~~53~~ which further comprises an opaque base housing formed with a recess, and wherein said semiconductor body is disposed in said recess of said base housing, and wherein said recess is at least partially filled with said luminescence conversion element.

47/63. (New): The semiconductor component according to claim <sup>6</sup>~~53~~, wherein said luminescence conversion element includes organic dye molecules in a plastic matrix.

44/64. (New): The semiconductor component according to claim <sup>6</sup>~~53~~, wherein said luminescence conversion element includes organic dye molecules in a plastic matrix, and wherein said plastic matrix is formed from a plastic material selected from the group consisting of silicone, thermoplastic material, and thermosetting plastic material.

47/65. (New): The semiconductor component according to claim <sup>6</sup>~~53~~, wherein said luminescence conversion element includes organic dye molecules in a plastic matrix, and wherein said

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luminescence conversion element has organic dye molecules in a matrix selected from the group consisting of an epoxy resin matrix and a polymethyl methacrylate matrix.

48/56. (New): The semiconductor component according to claim ~~52~~ <sup>5</sup> or ~~53~~ <sup>6</sup>, wherein said luminescence conversion element has at least one inorganic luminescence material selected from the phosphor group.

49/57. (New): The semiconductor component according to claim 1, ~~52~~ <sup>5</sup> or ~~53~~ <sup>6</sup>, wherein the inorganic luminescent material is selected from the group of Ce-doped garnets.

C1 50/58. (New): The semiconductor component according to claim 1, ~~52~~ <sup>5</sup> or ~~53~~ <sup>6</sup>, wherein the inorganic luminescent material is YAG:Ce.

51/59. (New): The semiconductor component according to claim ~~53~~ <sup>6</sup> wherein said luminescence conversion element has at least one inorganic luminescence material selected from the phosphor group, and wherein the inorganic luminescent material is embedded in an epoxy resin matrix.

52/60. (New): The semiconductor component according to claim ~~53~~ <sup>6</sup>, wherein said luminescence conversion element has at least one inorganic luminescence material selected from the phosphor group, and wherein the inorganic luminescent material is embedded in a matrix formed of inorganic glass with a relatively low melting point.

53/61. (New): The semiconductor component according to claim ~~53~~ <sup>6</sup>, wherein said luminescence conversion element has at least one inorganic luminescence material selected from the phosphor group, and wherein the inorganic luminescent material is embedded in an epoxy resin matrix, and wherein the inorganic luminescent material has a mean particle size of approximately 10  $\mu\text{m}$ .

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54/2. (New): The semiconductor component according to claim ~~13~~<sup>2</sup>, ~~25~~<sup>3</sup> or ~~26~~<sup>4</sup>, wherein said luminescence conversion element is provided with a plurality of mutually different materials selected from the group consisting of organic and inorganic luminescent materials.

55/73. (New): The semiconductor component according to claim ~~52~~<sup>395</sup> or ~~53~~<sup>396</sup>, wherein said luminescence conversion element includes dye molecules selected from the group consisting of organic and inorganic dye molecules partly with and partly without a wavelength conversion effect.

C 1 56/74. (New): The semiconductor component according to claim 1, ~~52~~<sup>5</sup> or ~~53~~<sup>6</sup> wherein said luminescence conversion element comprises at least one luminescent 4f-organometallic compound.

57/75. (New): The semiconductor component according to claim 1, ~~52~~<sup>5</sup> or ~~53~~<sup>6</sup> wherein said luminescence conversion element includes a luminescent material that is luminescent in a blue region.

58/76. (New): The semiconductor component according to claim ~~52~~<sup>5</sup> or ~~53~~<sup>6</sup> which comprises a transparent encapsulation with a luminescent material that is luminescent in a blue region.

59/77. (New): A full-color LED display device, comprising a plurality of the light-radiating semiconductor components of claim ~~52~~<sup>395</sup> or ~~53~~<sup>396</sup> arranged in a full-color LED display.

60/78. (New): In an interior lighting of an aircraft cabin, a plurality of the light-radiating semiconductor components according to claim 1, ~~52~~<sup>395</sup> or ~~53~~<sup>396</sup>.

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61/79. (New): The combination with a display device, a plurality of the semiconductor components according to claim 1, ~~52~~ or ~~53~~ disposed to illuminate a display of the display device.

62/80. (New): The semiconductor component according to claim 2, wherein the first wavelength range emitted by said semiconductor body and two second wavelength ranges produce an additive color triad, such that white light is radiated by the semiconductor component during operation thereof.

C 63/81. (New): The semiconductor component according to claim 1, ~~13~~, ~~25~~, ~~26~~ or ~~52~~, wherein the radiation emitted by said semiconductor body has a luminescence intensity maximum at a wavelength  $\lambda \leq 520$  nm.

64/82. (New): The semiconductor component according to claim 1, wherein said luminescence conversion element comprises a plurality of layers with mutually different wavelength conversion properties.

65/83. (New): The semiconductor component according to claim 1, wherein the inorganic luminescent material has a mean particle size of approximately 10  $\mu$ m.

66/84. (New): The semiconductor component according to claim 1, ~~13~~, ~~52~~ or ~~53~~, wherein said luminescence conversion element includes light-diffusing particles.

67/85. (New): The semiconductor component according to claim 1, ~~13~~, ~~52~~ or ~~53~~ which comprises a transparent encapsulation with light-diffusing particles.

68/86. (New): The semiconductor component according to claim 1, ~~13~~, ~~25~~, ~~26~~, ~~52~~ or ~~53~~, wherein said luminescence conversion element is surrounded by a further transparent encapsulation.

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87. (New): The combination with a display device, a plurality of the semiconductor  
components according to claim ~~52~~ <sup>295256</sup> or ~~53~~ disposed to illuminate a display of the display  
device, wherein said display device includes a liquid crystal display.

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